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and Its Treatment.**

**By CHARLES F. CRAIG, M. D.,
Danbury, Conn.**

Read before the American Medical Association, Sec-
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SOME REMARKS UPON THE URIC ACID DIATHESIS, AND ITS TREATMENT.

BY CHARLES F. CRAIG, M. D.,
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THE URIC acid diathesis is a rather vague term, covering a multitude of sins in diagnosis and treatment, in its commonly observed applications. Because a patient has a set of symptoms which we cannot dovetail into those of any one disease, organic or functional, is not to say that he is suffering from the uric acid diathesis; such a diagnosis is only a coverer up of ignorance, a soother of the conscience of the puzzled practitioner. If there be such a condition of the body as a uric acid diathesis it is evidenced by certain well known signs, which every practitioner should be able to recognize; it is not a universal repository in which every case which has a vague diagnosis can be placed, and it is time that this false idea be rooted out.

The uric acid diathesis exists in that person whose system fails to eliminate the proper amount of uric



acid. What this amount may be varies in each individual case. A deposition of an amount which would produce symptoms in one person might not be evidenced at all in another; it is not due so much to an excessive formation of the uric acid, but to a faulty elimination of it. Stated simply, the uric acid formed is not eliminated as it should be normally, but accumulates, according to Haig, in the blood, producing muscular pains, headache, mental depression, high pressure in the blood vessels, etc., or is deposited in the joints, producing gout and rheumatism.

The symptoms of the uric acid diathesis, excepting gout and rheumatism, are protean in number and variety and are exceedingly hard to classify. Among those affecting the digestive system are anorexia, discomfort after eating, flatulence, pyrosis and persistent constipation; of the urinary organs, a sense of heat and burning after micturition, frequent micturition, and pain over the region of the kidneys; the pulse may be irregular and intermittent, there is increased arterial tension and sometimes attacks of palpitation, and there is generally present great depression

of spirits, and a general sense of weariness and inaptitude for effort of any kind. The sleep is restless and on awakening in the morning the patient feels as tired or even more so, than on retiring.

The symptoms arising from the nervous system are of much interest, comprising vertigo, tinnitus aurium, muscular pains and cramps, headache, neuralgia, affecting various parts of the body, spinal irritation, vaso-motor disturbances, insomnia, general nervousness and fevers. Hysterical and even epileptiform symptoms have been described by some authorities, and delusions are not uncommon.

One or many of these symptoms may be associated in a single case, but in no one case will they all occur. It has long been the author's opinion that migraine, with its peculiar symptomatology, is an expression of the uric acid diathesis, and from repeated examinations of the urine after attacks of migraine this inference is strengthened, for in the vast majority of instances the urine has showed an excess of uric acid.

The symptoms enumerated are generally seen either in those leading

an indolent, luxurious life, little outdoor exercise being indulged in, or in those whose occupation keeps them within doors and subjects them to more or less mental strain and worry. In fact, the hypochondriacal or those tending toward that temperament are most subject to the uric acid diathesis.

The urine of those suffering from this "diathesis" possesses great clinical importance, and in every suspected case should be most carefully examined. It is always highly acid, of a dark golden color and in a large proportion of cases contains a sediment of uric acid crystals.

In a larger proportion of cases, however, the uric acid is not deposited as uric acid crystals in the urine, but exists in combination with sodium and ammonium, forming acid urates. When it is separated from its bases it crystallizes in rhombic or prismatic crystals, of a red color and it is these which form the red granules seen in some urines. Not every urine showing this sedimentation contains uric acid in excess, for it may be due to a decreased solvent power of the urine, rather than to an increased amount of uric acid.

More commonly the urine of those having the uric acid diathesis show a fine powdery sediment, pinkish in color, and which is formed by the precipitation of amorphous urates. Such a deposition may often occur in the urine of other diseases, but its presence is always suggestive, and the clinical history will generally bear out the diagnosis of uric acid disease.

It is not my purpose to discuss here the numerous theories advanced concerning the formation and excretion of uric acid, save to say that it is now pretty well established that it is formed within the tissues, and gotten rid of by the kidneys. Experimental research seems to bear out Minkowski's view that it is formed within the liver.

The treatment of this condition in all its phases, is, as may well be supposed, not always satisfactory. That this is so is proven by the great number of therapeutic agents which have, at various times, been announced and have occupied for a time the favor of the profession, only to be found but seldom useful or, more often, useless in combating the diathesis. In my opinion, more attention paid to diet

and exercise, and less to medicine, would be productive of better success in treating this class of cases. We have to do, not with a well known disease entity, accompanied by a greater or less number of characteristic symptoms and produced by an external agent, but rather with a numerous army of divergent, and often unexplainable symptoms, produced by a grave nutritional disorder of the system. Unless the fault which lies at the basis of the diminished power of eliminating the uric acid formed is corrected, the treatment can only be symptomatic. That the system can be aided in correcting this error of metabolism there can be no doubt, and it will be found that such aid will consist largely in a carefully selected dietary and a proper amount of sleep and exercise.

Regarding the diet it may be said that the carbohydrates should be diminished, and that, therefore, saccharin and starchy foods should be but lightly partaken of. Sugar should be used as little as possible, as also the sweet fruits. Hot bread stuffs, pastry, cake, cereals, and corn, especially, should be avoided. Potatoes, which you will find are very

favorite articles of diet with these patients, should be either entirely cut off, or used very sparingly. Meats, oysters, fish, eggs, the fresh vegetables, such as tomatoes, cauliflower, lettuce and cucumbers, can be used, but moderation in eating should be carefully impressed upon the patient. Milk should be given plentifully. The various mineral waters serve to favor elimination, and the patient should drink large quantities of them. Alcohol in every form is hurtful and should be avoided. The skin should be kept active by means of daily baths, and the bowels open by occasional saline purgatives. The dress should be warm, and suited to the climate.

Exercise is of the greatest importance, and should be taken out of doors. In almost every case showing the symptoms of the uric acid diathesis, we find on inquiring that but little out door exercise is taken, and indeed little exercise of any kind. Boating, hunting, riding, fishing, walking, are all good forms of exercise, and should be, in one form or another, insisted upon as important elements in the treatment. Let the patient be outdoors as much as possi-

ble, and engaged in some form of muscular exercise. Too much importance cannot be paid to exercise in the treatment of the uric acid diathesis.

Regarding the medicinal treatment of these cases, I would say that until within the last few months, I had but little faith and still less success in the treatment of the uric acid diathesis by drugs. To be sure, the various symptoms can be alleviated by suitable agents and the use of mineral waters has always seemed to me to be beneficial, but as far as any marked and lasting benefit was concerned, I had never been able to satisfy myself that there was such. During the last few months, however, I have been using in the treatment of these cases a synthetic remedy, called Uricedin, which has given me great satisfaction. This agent was first introduced by Stroschein in 1893 and is a chemical compound, consisting of citrate of sodium, sulphate of sodium, chlorate of sodium, acetate of sodium, tartrate of sodium, pomate of sodium, limonine, etc., in definite proportions. The preparation is produced by a special chemical process through the action of purest sul-

phuric and hydrochloric acids and carbonate of sodium on true citric acid from the lemon fruit.

I have used this drug in a number of cases of which the following are examples:

CASE I. T. H., æt. 40, had suffered for several months with flatulency, poor appetite, bilious attacks, headache, and vague muscular pains, neuralgic in character. Was much constipated. Gave a family history of rheumatism and sciatica. His urine was dark red in color, of high specific gravity, (1.030) and contained a heavy deposit of uric acid crystals. Reaction highly acid. No albumin, no sugar. He was placed upon teaspoonful doses of Uricedin dissolved in a glass of hot water, three times a day, and directed concerning his diet and mode of life. At the end of a week he reported that he was feeling much better. The urine now had a specific gravity of 1.022, was only slightly acid and contained no appreciable sediment of uric acid, although under the microscope a few crystals were detected. Two weeks afterward the patient returned, and reported that he felt better than he had in months; his appetite had re-

turned, headache and muscular pain had vanished and his bowels moved regularly.

At the present time, about two months since the commencement of treatment he is well to all appearances. His urine now has a specific gravity of 1.010, is alkaline in reaction, shows no sediment and is increased somewhat in amount. He has not taken any medicine for three weeks, and says that he does not feel the need of any.

CASE II. I. C., female, æt. 12
Family history, rheumatism in father and mother. Complained of neuralgic pains in arms and legs, frontal headache and flushes of heat; also poor appetite and constipation, with occasional attacks of vomiting and diarrhœa. Had been that way for about four months. Physical examination revealed nothing. Her urine was below the normal in amount, dark yellow in color, having a strongly acid reaction and a specific gravity of 1.027. There was a heavy deposit of acid urates. No albumin or sugar. She was put upon half teaspoonful doses of Uricedin morning and evening, dissolved in a glass of hot water. At the end of two weeks her father

called at the office and reported that she was feeling very much better. At this time her urine had a specific gravity of 1.015, slightly alkaline reaction and no deposit. Treatment was continued for another week, at the end of which time I saw her. The pains in the arms and legs, as well as the headache, had disappeared, her appetite was good and her bowels regular. I directed that on the first return of any symptoms they were to recommence the treatment, but this has not, as yet, been necessary.

CASE III. B. B., male, æt. 24. Family history, rheumatic. He came to me complaining of great nervousness, frontal headache, general lassitude, and muscular pain, constipation, poor appetite, restless sleep, interrupted by dreams, and a feeling of depression merging almost into melancholia. An examination of his urine showed a specific gravity of 1.030, a strong acid reaction and a heavy deposit of amorphous urates. There was no albumin present, but a very slight trace of sugar (about 0.25%). He was placed upon teaspoonful doses of Uricedin dissolved in a glass of hot water, three times a day. At the end of a week he

reported that he was not much, if any, better. His urine showed a specific gravity of 1.025, acid reaction, and a somewhat diminished sediment of amorphous urates. The treatment was continued and at the end of three weeks the urine had a specific gravity of 1.020, alkaline reaction, and contained no sediment. The patient was feeling much better, his appetite was good, the general feeling of lassitude and muscular soreness and pain had disappeared, and his sleep was refreshing and sound. At the present time he is taking no medicine, and is feeling well.

In the three cases just recorded great emphasis was laid upon diet and exercise, and my directions in that regard were carefully carried out.

The following case is a most remarkable one, especially to those well acquainted with the patient.

Dr. W., æt. 50, American, 200 pounds in weight, with a hereditary tendency to gout, in 1886 had his first attack of nephritic colic, passing a small calculus. At intervals of about two months for four years the attacks recurred until March, 1890, when the stone which I give you was

passed immediately following an attack of the grip.

This last attack nearly cost him his life, the stone taking several days to pass, and the prostration resulting from the same rendered his recovery doubtful. A vigorous constitution, however, pulled him through, and for the last seven years no stone has passed, but all the evidences of stone in the pelvis of the kidney, constantly increasing in size have been present. In fact all the symptoms of this patient pointed conclusively to a gouty diathesis of the most pronounced type. At no time during these later years has there been a day, an hour or a minute without pain, most of it a terrible pain, and the exertion, worry, care or indulgence in stimulants, or excessive use of tobacco would bring on those frightful contractions of the kidney, in its futile efforts to expel the stone. Nights were unrestful and filled with bad dreams, while the bed looked in the morning as if an elephant had slept in it. Great mental depression followed, with irritability and insomnia, until life became a burden.

This man being a physician naturally not only had the advice of the

leading members of the profession in this country, but those abroad, whose treatment he faithfully carried out, with only the most temporary relief. It was by accident that he came across Uricedin, became impressed with its value from its formula, commenced using it three times a day for three days, and afterwards once a day till the present writing. The result of this treatment has been that after three days the drainage went not to return but once, when an exacerbation occurred after the indulgence in a champagne dinner. Eight pounds were lost, the girth around the waist was reduced four inches, the bowels were regular, the skin cleared up, the appetite improved, sleep was dreamless and profound, the mental depression disappeared, the capacity for work returned as well as a desire for it, and the change was so great as to create a very profound impression upon his friends.

The remarkable feature of this case, however, was the large quantity and increasing amount of debris of the stone.

R., æt. 33, another physician, weighed 200 pounds, and presented

all the symptoms of gout, including pain in the right big toe, almost incapacitating him; large quantities of uric acid were present in the urine, and there were painful attacks in the kidneys and the stomach. While this case was not so severe or long standing as the preceding one, the results of the treatment were quite as marked and decisive.

Mrs. B., æt. 52, suffered from gout of the stomach for the last eight years, was relieved within a week and perfectly cured after a month's treatment.

The cases cited above are average cases and show the benefit resulting from proper hygienic routine together with the use of Uricedin. While I believe no drug can do much good if diet and proper exercise be not attended to, and that no drug can be called a specific in the treatment of this diathesis, I do believe from my own experience and that of others, that we have in Uricedin a most valuable addition to the therapeutics of the uric acid diathesis.

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